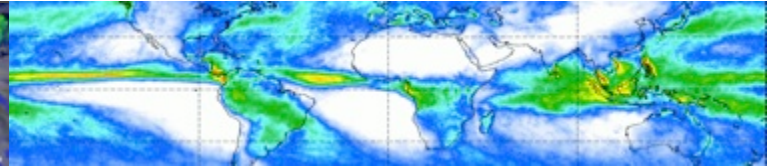
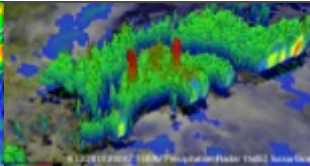
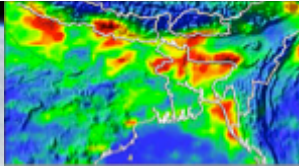
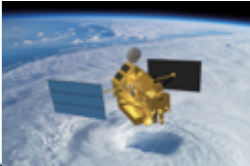


# TROPICAL RAINFALL MEASURING MISSION—STATUS 2015

Dr. Scott Braun

TRMM Project Scientist

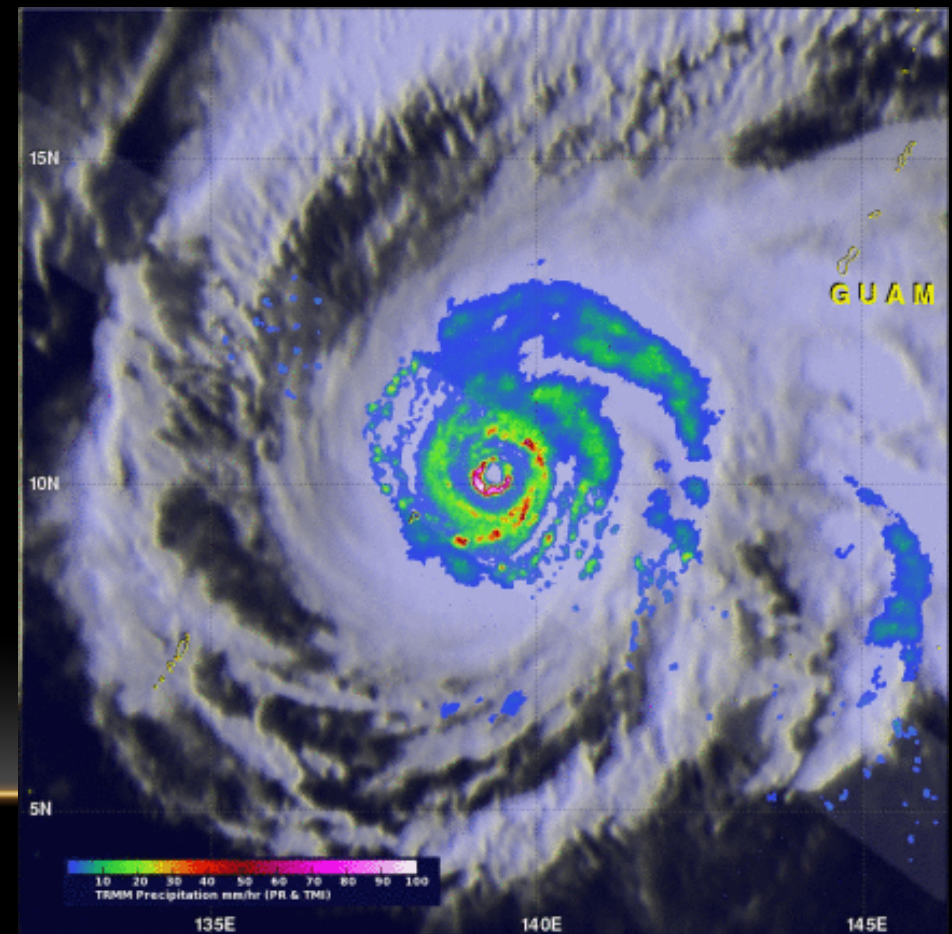
Goddard Space Flight Center

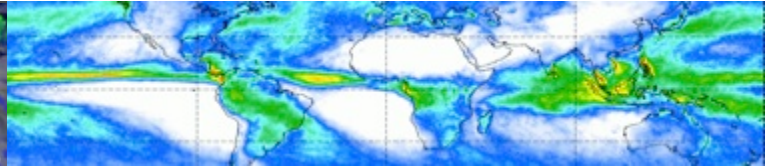
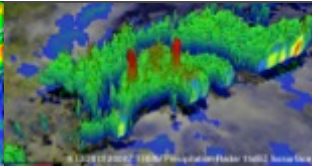
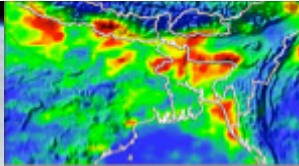
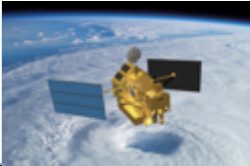


# SPACECRAFT AND INSTRUMENT STATUS

- PR shut down on April 1, 2015 on TRMM orbit 98,989

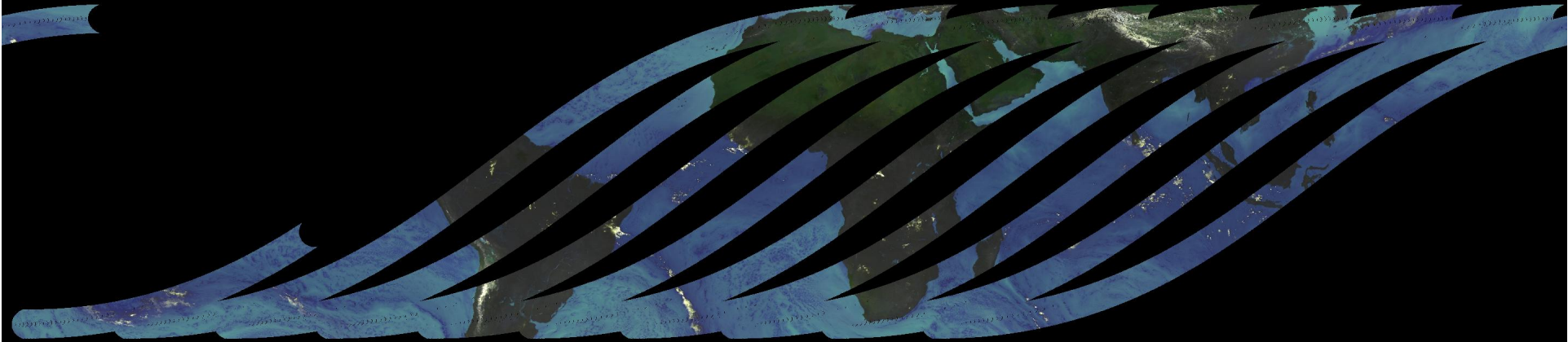
Supertyphoon Maysak, on 1 April 2015, was the last significant storm to be observed by TRMM PR (courtesy of Hal Pierce)



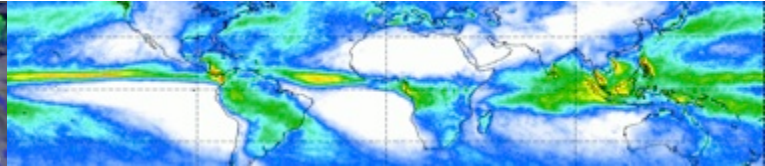
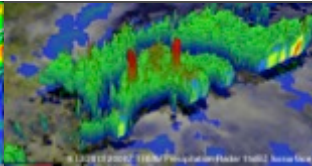
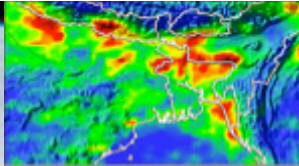
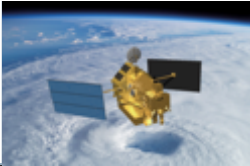


# SPACECRAFT AND INSTRUMENT STATUS

- PR shut down on April 1, 2015 on TRMM orbit 98,989
- TMI/LIS instruments shut down April 8



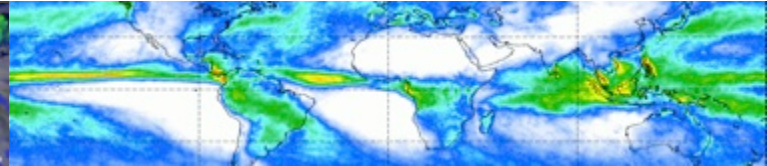
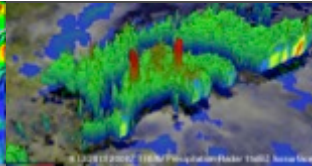
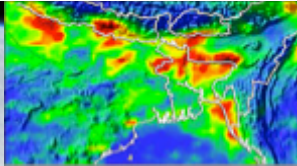
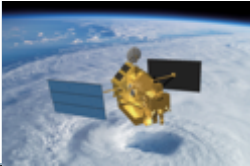
Final series of orbits for TRMM TMI (courtesy of C. Kidd)



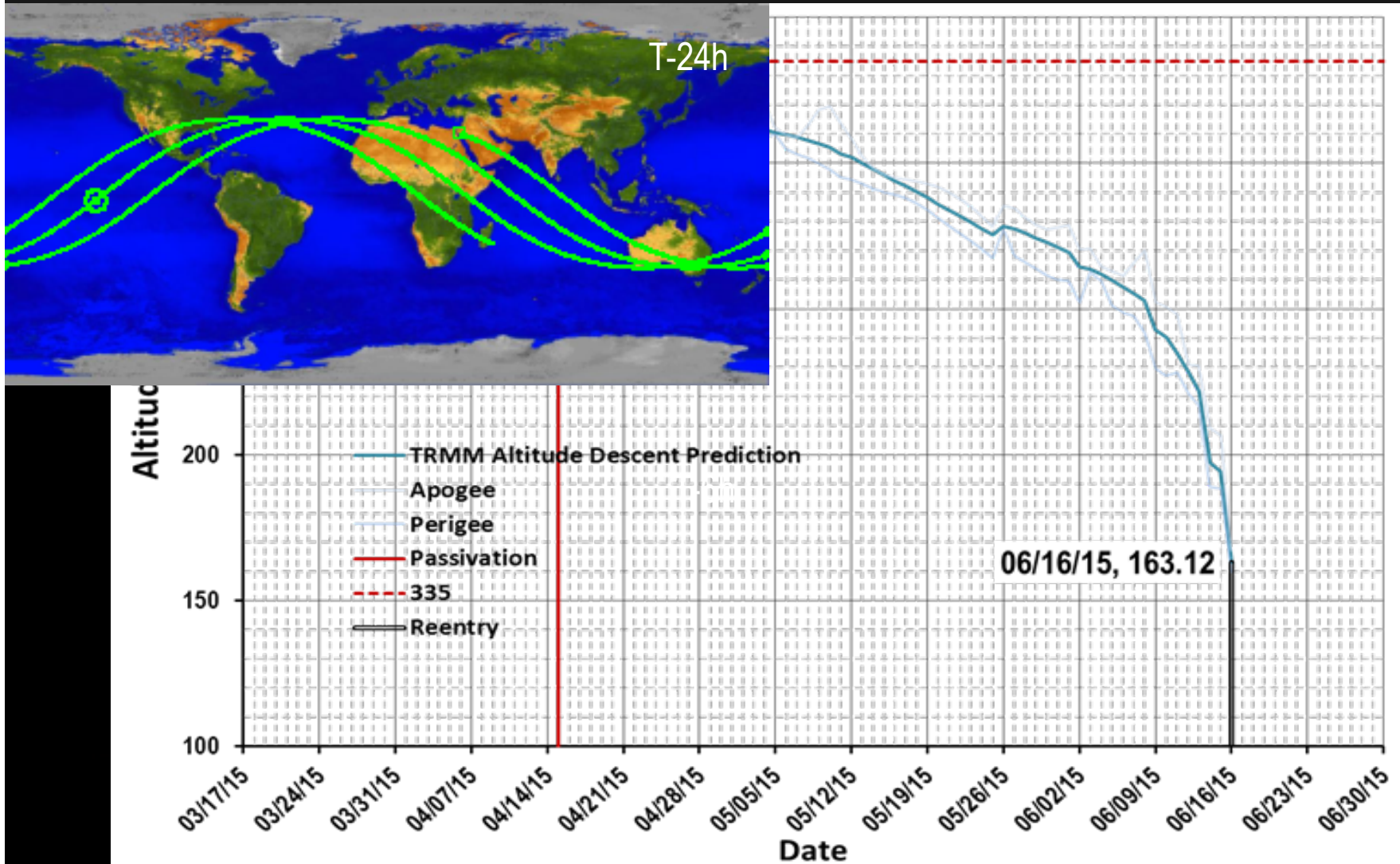
# SPACECRAFT AND INSTRUMENT STATUS

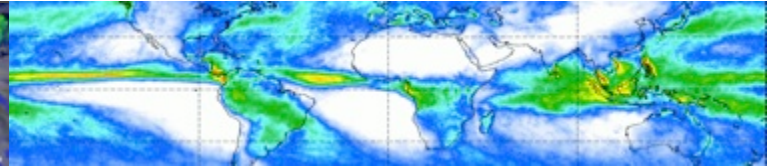
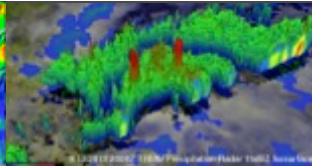
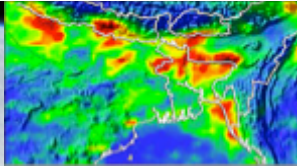
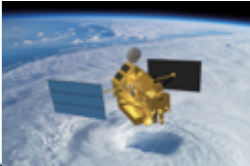
- PR shut down on April 1, 2015 on TRMM orbit 98,989
- TMI/LIS instruments shut down April 8
- Remaining systems powered down April 15
- TRMM reentered on 0355 UTC June 16





# TRMM'S RE-ENTRY





## A PREMATURE END?

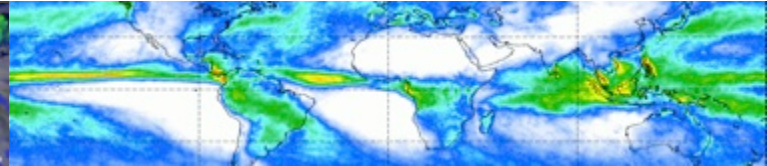
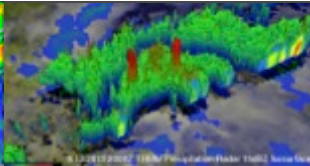
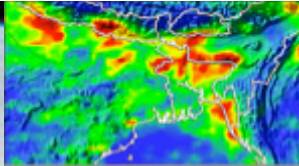
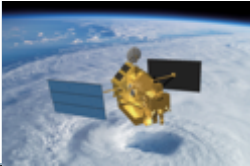
TRMM Erroneously blamed for an explosion over the Philippines on June 15...

...a day BEFORE re-entry

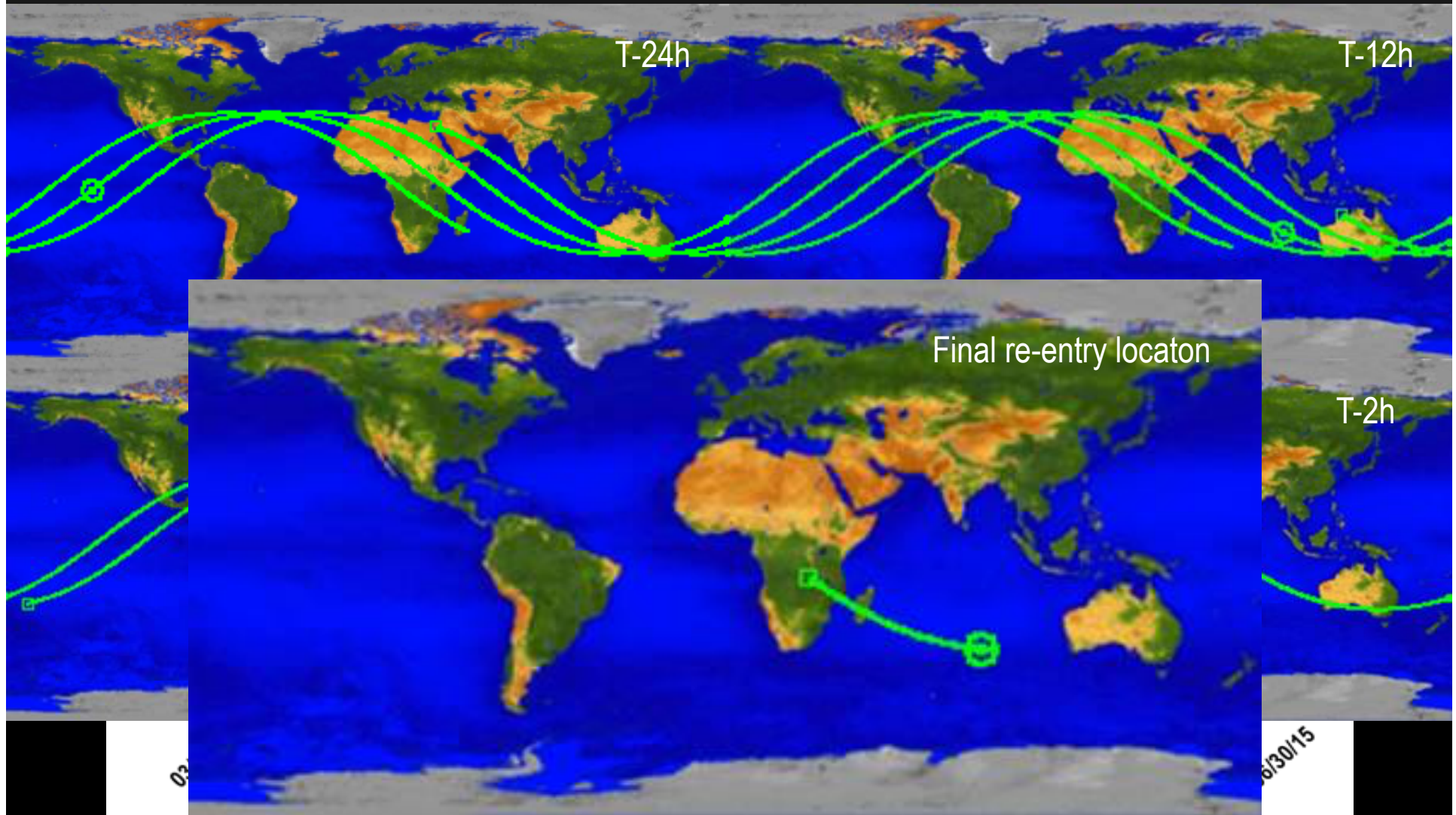
An american-japanese spacecraft that was put in orbit 17 years ago fall Back to earth today at around 00:14:00h June 15, in the hinterlands of sultan kudarat province. The spacecraft operated by NASA Explode and disintegrate in the atmosphere. Source senator ninoy aquino sultan kudarat pnp, fyi gd pm sir...

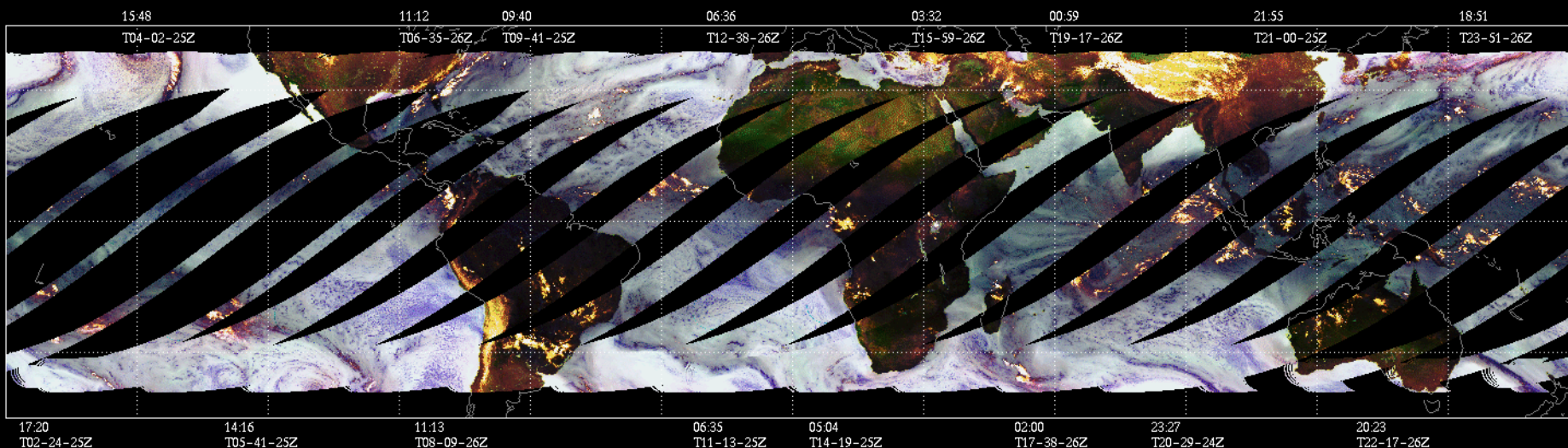
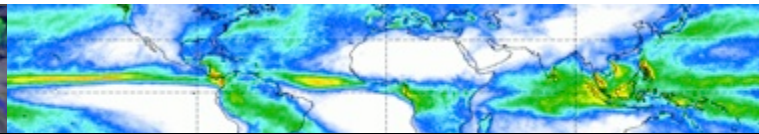
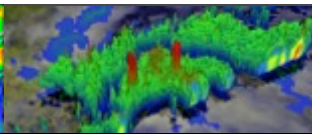
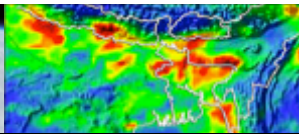
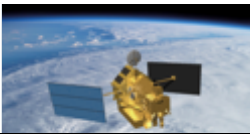
Reported Sultan Kudarat police text message





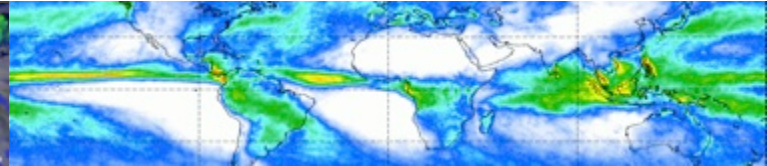
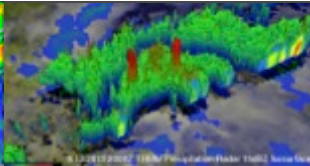
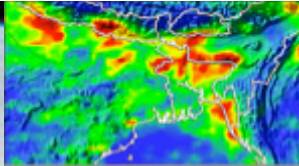
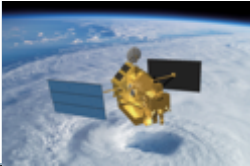
# TRMM'S RE-ENTRY





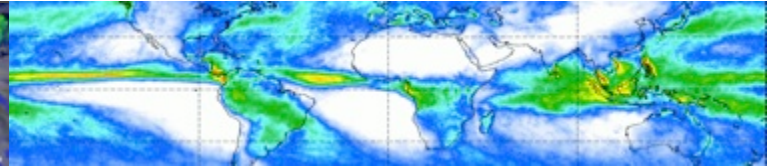
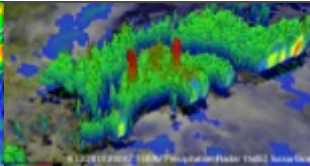
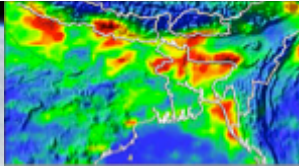
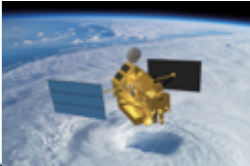
3a	90° Yaw Observations	90° Yaw	~ 385km (11/15/14-11/25/14)	Requires spacecraft maneuvers	Completed 44 from 2014-11-15 to 11-25
2d	Wider Swath Experiment	Normal Earth Point	#2 @ 380km #3 @ 374km	PR configuration	Completed 2014-11-24 (#2) 2014-12-27 (#3)
2b	Dense Sampling	Normal Earth Point	#1 @ 368km #2 @ 362km	PR configuration	Completed 2015-01-05 (#1) 2015-01-24 (#2)
<del>2e</del>	<del>KaPR Scan Simulation</del>	Normal Earth Point	385km to 360km	PR configuration	Waived by JAXA
<del>3b</del>	<del>Pitch Maneuver</del>	<del>0.6° Pitch</del>	~360km	Requires S/C maneuver	Waived by JAXA
1	Nominal Observation	Normal Earth Point	356km to 340km	Normal ops	<b>Completed 2015-02-12 to 03-29</b>
-	TMI Deep Space Cal.	Inertial	~350km	6 sep. orbits/2 days	Completed 6 orbits from 2015-02-26 to 02-27
	DMUM #611-616	Normal Earth Point	~350km		Completed 6 burns from 03/01 to 03/11
	XCAL Deep Space Cal.	Inertial/90° yaw	~340km	Not a designed maneuver	<b>Completed 4 orbits 2015-03-25 (2 orbit) 2015-03-26 (2 orbits)</b>





# TRMM BATTERY ISSUES

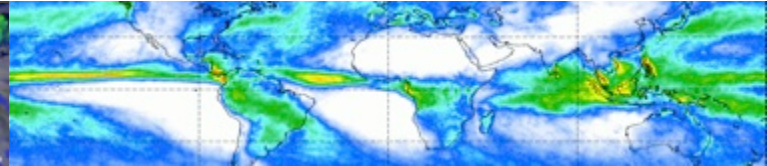
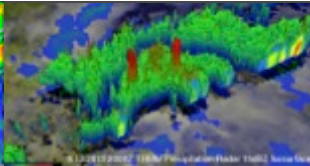
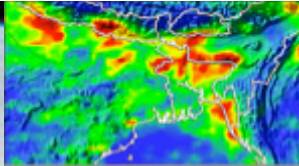
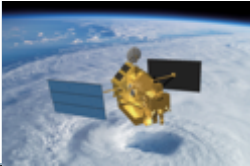
- March 21-22, 2014
  - Cell shorts caused drop in battery 1 charging
  - Power load shedding recommended  $\Rightarrow$  VIRS turned off
- August 9, 2014
  - Cell shorts led to temperature spike in battery, drop in essential bus voltage
  - Action: Led to cycling of power for PR and LIS when at low beta angle
  - Continued for duration of descent



# FINAL TRMM REVIEWS

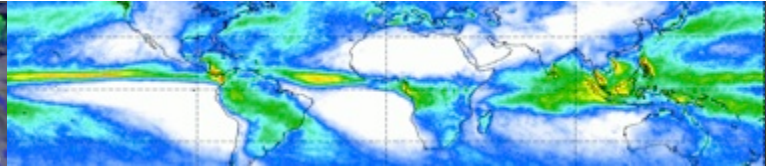
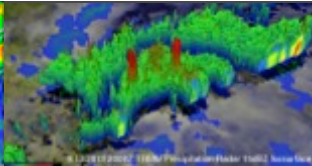
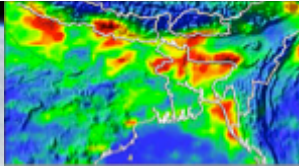
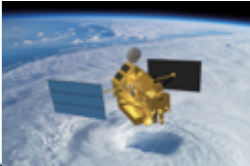
- Final Senior Review in 2015 waived due to expected re-entry
- TRMM Decommissioning Review, March 17, at GSFC
- Key Decision Point-F Review, March 24, at HQ
- TRMM Disposal Review, March 31, at GSFC





# ALGORITHM UPDATES

- TRMM reprocessing begins ~late 2016
- Requires algorithm coding changes, intercalibration with GMI, bias corrections/calibrations for TMI, reformatting to GPM format, testing in integration and test environment, evaluation prior to final acceptance
- Followed by latent heating and multi-satellite product algorithms
- Completed in late 2017-early 2018
- TMPA (3B42RT, 3B42, 3B43)
  - Likely to continue into mid 2017



# TRMM & GPM ON WEATHER GEEKS (AIRED MAY 3)

